

NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) WFO Jackson, Mississippi
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH YEAR March 2010
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE Alan E. Gerard, Meteorologist In-Charge DATE 04/23/2010

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ An X inside this box indicates that no river flooding occurred within this hydrologic service area.

Synopsis...

For the month of March, much of the Hydrologic Service Area (HSA) experienced below normal rainfall. The only exception to this trend was over portions of East Central Mississippi.

The month opened with an upper level system pushing east from the southwestern United States. A surface low pressure system formed in the northwestern Gulf of Mexico ahead of this upper system. From the first into the second, the low moved along the Gulf Coast bringing over running conditions to all of the HSA. Rainfall totals ranged from 0.50 to 1.50 inches over Mississippi and Northeast Louisiana south of I-20. Rainfall to the north was generally 0.50 inches or less. High pressure built into the region bringing below normal temperatures on the 2nd. Cold temperatures remained in place with only a modest warming trend from the 5th to the 7th.

By the 8th, winds shifted to the southeast bringing warmer and more humid air into the area. From the 9th until the 11th, a strong southerly flow, along with a series of upper level systems moving across the region, produced moderate rainfall. Some locally heavy rainfall from 3.00 to 5.00 inches was reported over portions of Central and East Mississippi, including portions of Lauderdale, Dekalb, and Noxubee Counties. The cold front pushed through on the 11th, and an upper level low pushed across the region on the 12th. Rainfall totals across the area from the 9th until the 12th ranged from 1.50 to 5.00 inches. Some heavier 24 hour totals included: 3.06 inches at Okatibbee Lake, MS (10th); 2.65 inches at Bay Springs, MS (10th); 2.46 inches at Columbus, MS (10th); and 2.14 inches at Newton, MS and Dekalb, MS (10th). High pressure built into the HSA late on the 12th.

Spectacular spring weather occurred over the area through the 15th. Some upper level systems moving through the area brought cloudiness from the 16th to early on the 18th. Some light rainfall occurred over extreme southeast portions of the HSA from late on the 16th into the 17th. Surface high pressure remained in place from the 18th into the 19th.

From the 19th into the 20th, high pressure shifted east allowing a southerly

flow ahead of a cold front which moved through the region from the afternoon of the 20th until the 21st. Rainfall from 0.25 to 2.00 inches was produced by this system. A strong closed upper low pressure center moved across the region on 21st bringing some light snow flurries for several hours along and north of I-20. High pressure moved into the HSA with cold and windy conditions prevailing through the morning of the 22nd. Fair and cold conditions prevailed through early on the 24th.

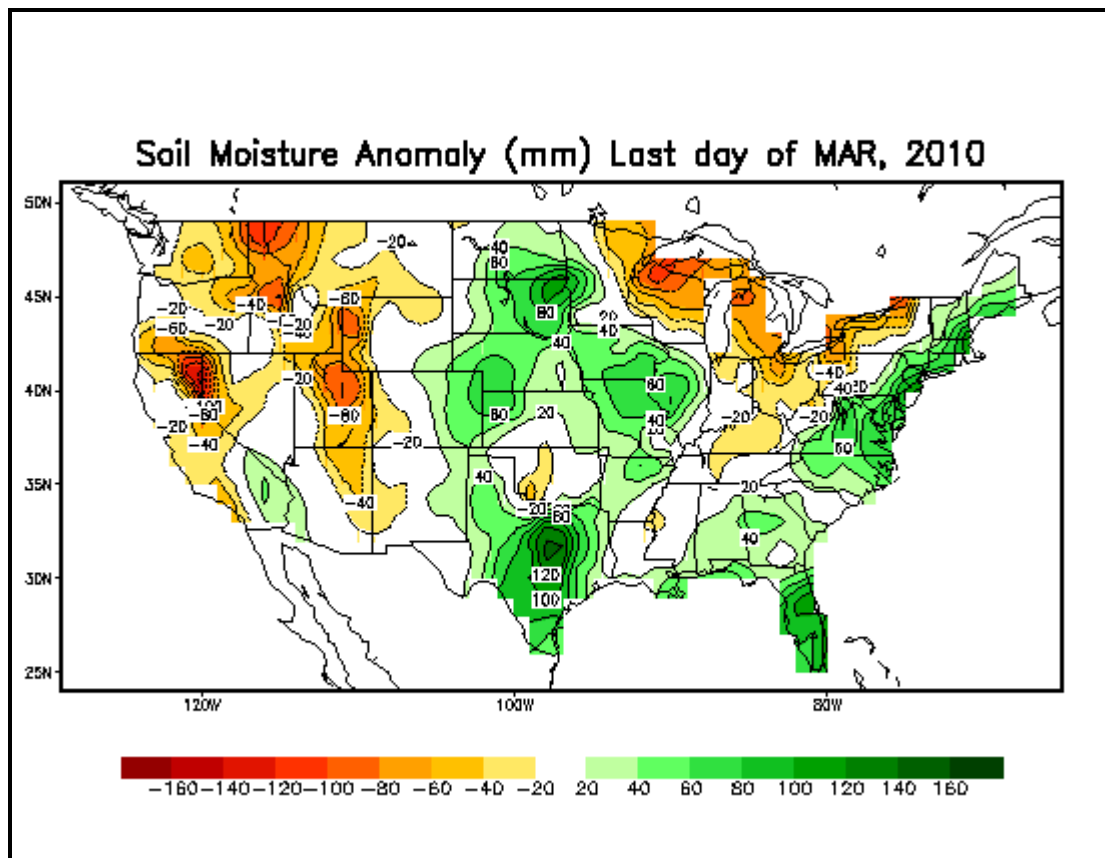
Temperatures warmed significantly during the 24th ahead of an approaching cold front. The cold front pushed through on the 25th producing an inch or less of rainfall across the region. High pressure moved into the area on the 26th and 27th followed by another cold front on the 28th. Rainfall was a half inch or less mainly north of I-20 in Northeast Louisiana and northwest of the Natchez Trace and I-20 in Mississippi. High pressure dominated the weather through the end of the month.

River and Soil Conditions...

Below normal rainfall continued over much of the HSA. Rainfall was less than 25 percent of normal over northern portions of Northeast Louisiana and Southeast Arkansas into the Mississippi Yazoo Delta Region. Much of the remainder of the area had rainfall totals between 25 to 75 percent of normal. Rainfall in East Central and our Northeast Mississippi counties had rainfall from near normal to around 165 percent of normal.

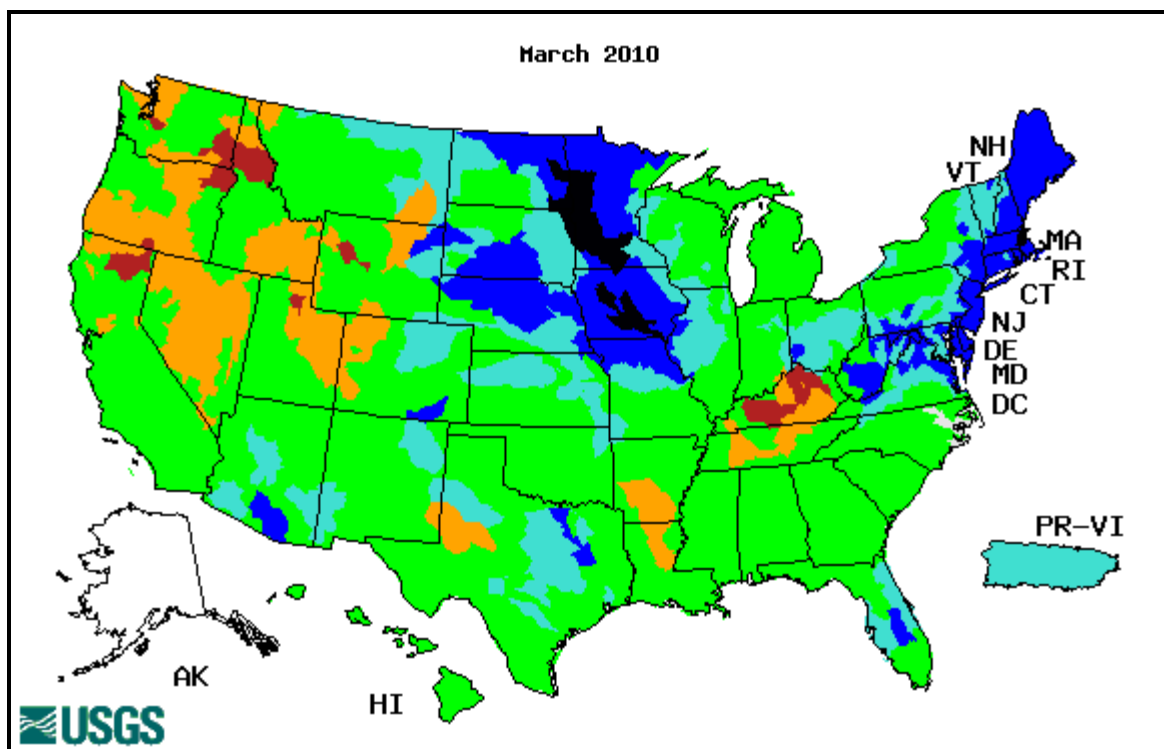
Below normal rainfall and increased evaporation and evapotranspiration during the last days of the month allowed the soils to dry out over the entire region. Soil moisture was near normal over all but northern portions of Northeast Louisiana, portions of Southeast Arkansas, and a portion of West Mississippi where conditions had dropped to below normal.

Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)



March 2010

The United States Geological Survey's (USGS) March 2010 river streamflow records were compared with all historical March streamflow records. Streamflow was near normal over most of the river basins in the HSA.



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

The Yalobusha at Whaley and the Yazoo River at Yazoo City dropped below flood stage on the 2nd. This was the first time these gage sites have been below flood since mid to late January. Rainfall during the first several days of the month caused minor river rises to many basins along and south of I-10 in Mississippi. Portions of Central and East Mississippi had heavy rainfall from the 9th into the 10th causing minor flooding of the Upper Big Black River, Upper Pearl River, and the Tuscolameta Creek. Elsewhere, Minor to moderate rises occurred over much of Mississippi. The remainder of the month saw little changes in HSA rivers.

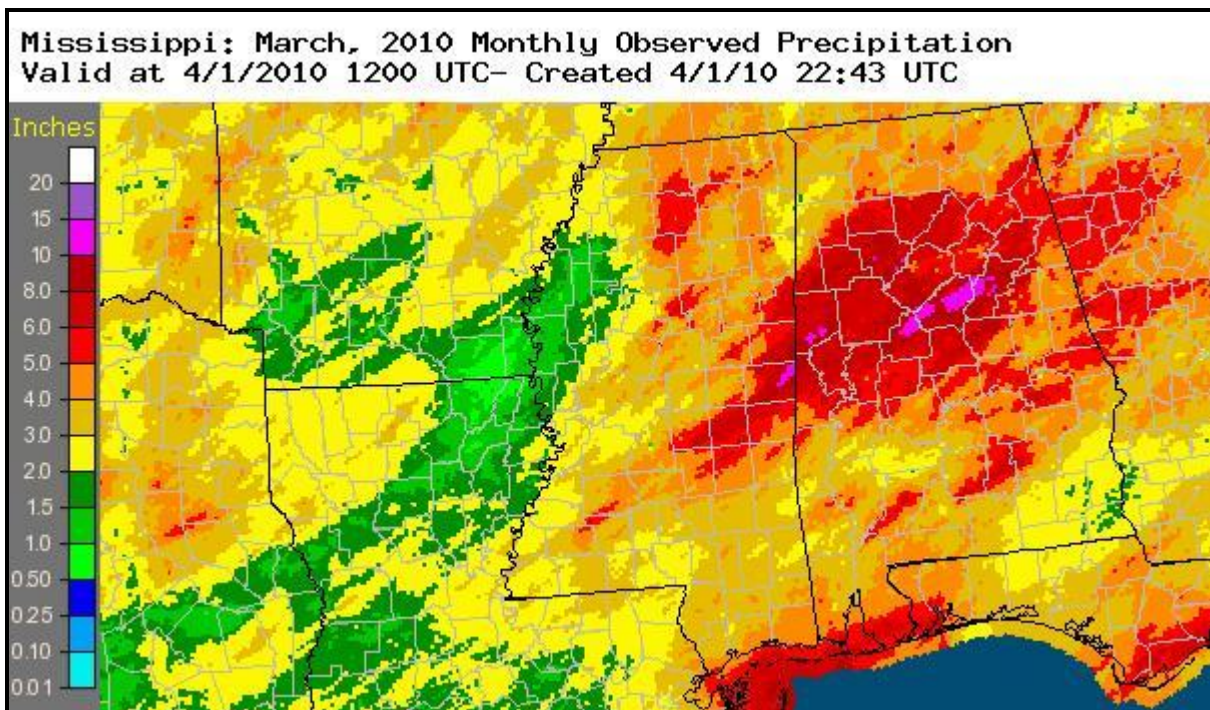
Snowmelt from the Upper Ohio River and the Upper Mississippi River caused significant below flood stage rises on the Mississippi River from Arkansas City to Natchez. The river began rising around the middle of the month and continued to do so until the end. The United States Army Corp of Engineers closed the Steele Bayou Structure on March 18th to keep Mississippi River water from entering the Yazoo Backwater Region north of Vicksburg.

Based on normal to below normal soil moisture conditions, normal streamflow conditions, and an expected normal rainfall over the HSA, the flood potential for next 60 to 90 days is expected to be:

<i>Pearl River System:</i>	Normal.
<i>Yazoo River System:</i>	Normal.
<i>Big Black River System:</i>	Normal.
<i>Homochitto River System:</i>	Normal.
<i>Pascagoula River System:</i>	Normal.
<i>Northeast LA and Southeast AR:</i>	Normal.
<i>Tombigbee River System:</i>	Normal.
<i>Mississippi River:</i>	Above Normal. (as of the end of March)

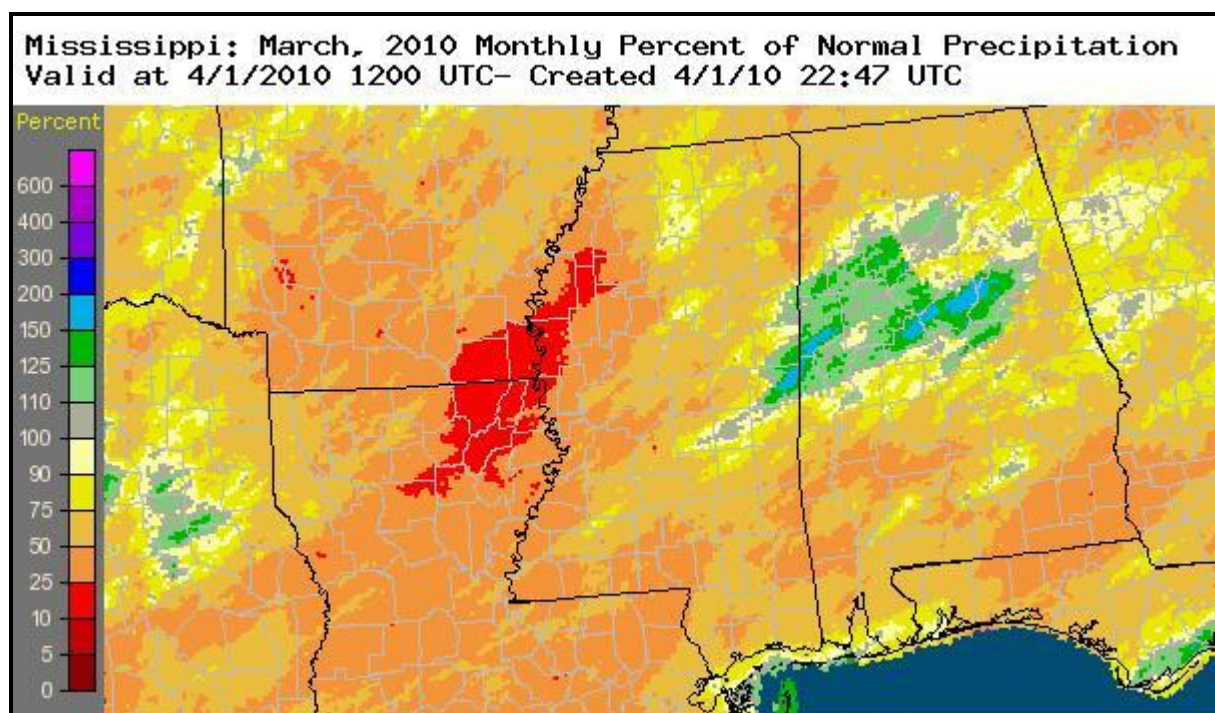
Rainfall for the month of March

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on February 28th until 7 am on March 31st were: 7.19 inches at Dekalb, MS; 6.99 inches at Pat Harrison Dunn's Falls Waterpark, MS; 6.18 inches at Forest, MS; 6.16 inches at Newton Ag Experimental Station; 6.04 inches at Macon, MS; 5.94 inches at Collinsville, MS and 5.74 inches at Bay Springs, MS.



March 2010 Rainfall Estimates

Note: Green area above looks to be too low. Rainfall should be around 2 to 2 and half inches.



March 2010 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

Note: Red area is too low and should be 25 to 50 percent of normal.

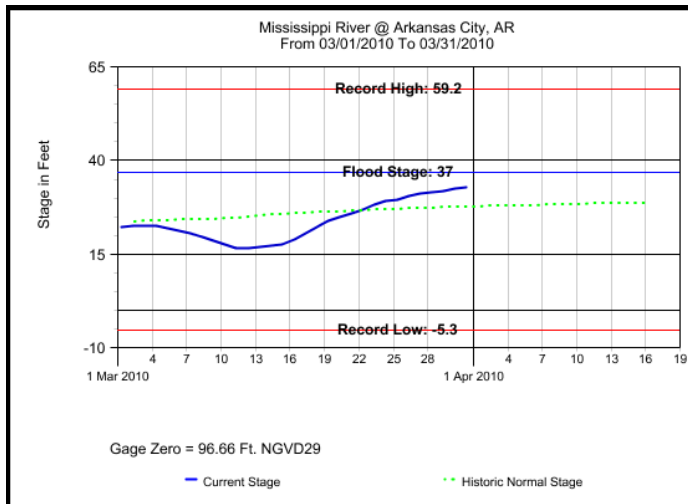
March rainfall for Selected Cities...

City (Airport)	March Rainfall	Departure from normal	2010 Rainfall	2010 Departure from Normal
Jackson, MS	3.39	-2.35	12.63	-3.28
Meridian, MS	5.45	-1.48	14.60	-1.48
Greenwood, MS	3.44	-2.35	11.38	-2.35
Greenville, MS	1.66	-4.15	9.48	-5.60
Hattiesburg, MS	3.67	-2.87	14.89	-4.42
Vicksburg, MS	2.11	-4.29	9.89	-7.49

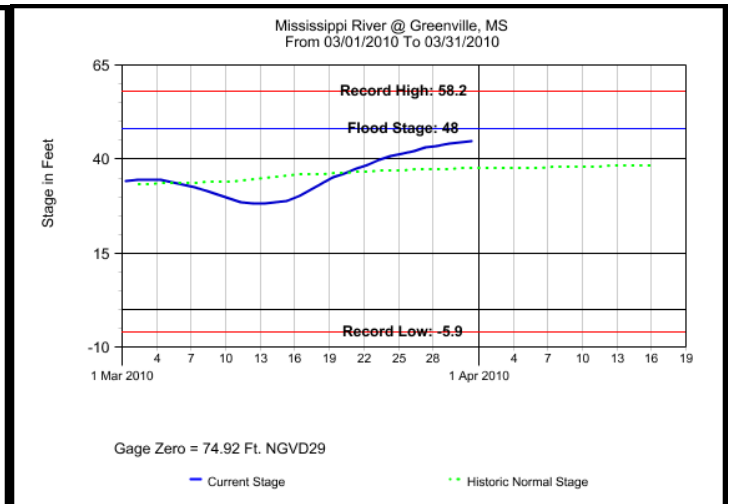
Mississippi River...

Mississippi River Plots for March, 2010

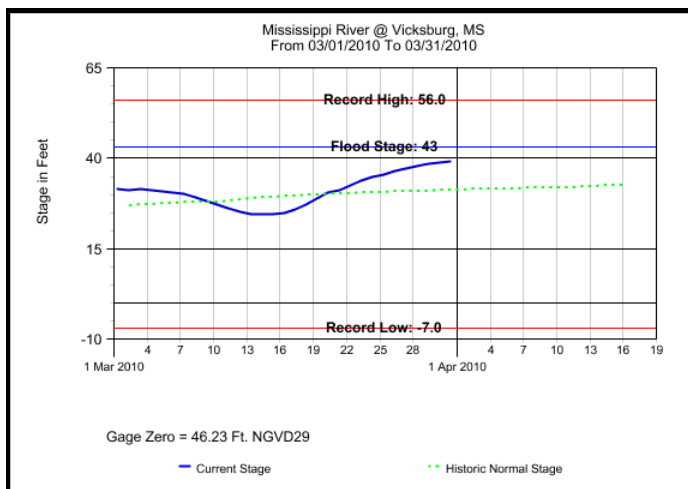
Plots Courtesy of the United States Army Corps of Engineers



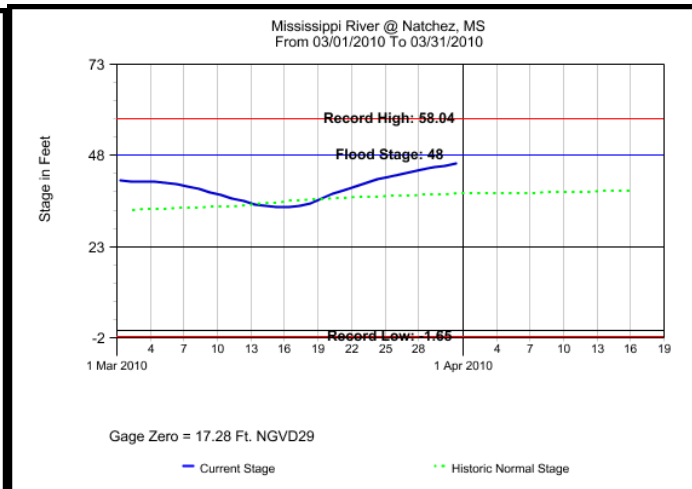
Arkansas City, AR



Greenville, MS



Vicksburg, MS



Natchez, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	33.02	03/31/10	16.38	03/12/10
Greenville, MS	48	45.26	03/31/10	28.10	03/12/10
Vicksburg, MS	43	39.57	03/31/10	24.39	03/14/10
Natchez, MS	48	45.99	03/31/10	33.54	03/16/10

Total Flood Warning products issued: 16

Total Flood Statement products issued: 252

Daily Rainfall Products (RRA'S) issued: 28

Daily River Forecast Products (RVS'S) issued: 28

Daily River Stage products (RVA'S) issued: 28

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Service Hydrologist

&

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Assistant Hydrologist/Observing Program Leader (OPL)

Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley

Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District